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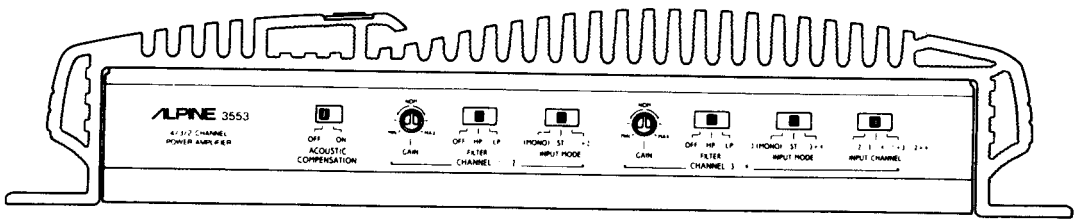
ALPINE SERVICE MANUAL

4/3/2 Channel Power Amplifier



3553

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Additional Schematic Diagram Inserted.

Specifications

Power Source	14.4V DC (11V to 16V allowabe)
Current Drain (No Signal)	2.5A
Power Output (20Hz~20kHz)	0.08% T.H.D. Load 4ohm×4 : 30W
	0.8% T.H.D. Load 2ohm×4 : 45W
	0.8% T.H.D. Load 4ohm×2 at BTL : 90W
Input Sensitivity (at 35W output)	0.1~2V±2dB
Input Impedance	20±2kohm
Frequency Response (at-1dB)	20Hz~40kHz
S/N Ratio	100dB
Residual Noise	0.14mA
Semiconductors	17 IC's, 47 Transistors, 16 Diodes, 5 Zener Diodes
Dimensions (W×H×D)	285×55×270mm
Weight	3.5kg

Note: Due to continuing product improvement, specifications and design are subject to change without notice.

FEATURES

- **4/3/2-CHANNEL OPERATION**

  The 3553 can be used in as:

  a. 4-channel amplifier, producing 35w per channel into 4 Ω, or 50w per channel into 2 Ω.

  b. 3-channel amplifier, producing 35w(4 Ω) or 50w(2 Ω) into channels 1 & 2, and 100w(4 Ω) into the third channel.

  c. 2-channel amplifier, producing 100w per channel into 4 Ω.

- **STATUS MONITOR**

  This indicator illuminates in green when the amplifier is on and operational. This light will turn orange if any internal protection circuitry is activated.

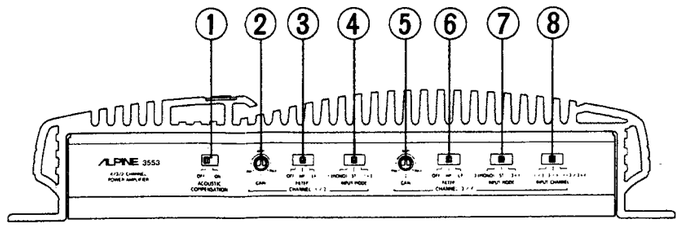
- **ACTIVE DIVIDING NETWORK**

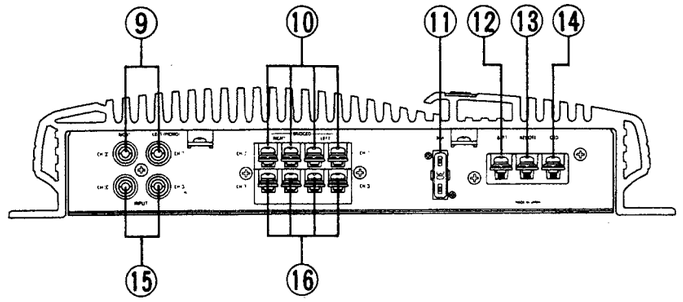
  A pair of built-in, switchable and independent electronic crossover network at 80Hz, 18dB per octave, can be used to set up the amplifier for low-pass (subwoofer) or high-pass (tweeter/midrange satellite) applications. These networks can also be switched off to allow full-range signal amplification.

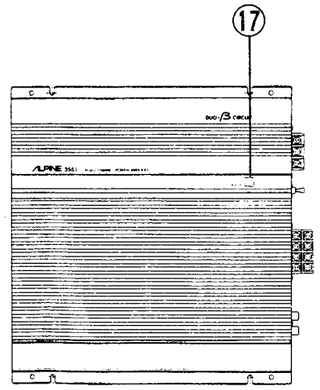
- **ACOUSTIC COMPENSATION CIRCUITRY**

  A selectable (Off or On) equalization curve can be added to the amplifier's output signal, compensating for the inherent non-linearities of the automobile interior. It extends low bass response and eliminates mid-bass boominess, giving the low frequency response of the audio system tightness and accuracy.

SWITCHES AND TERMINALS







SWITCHES AND TERMINALS

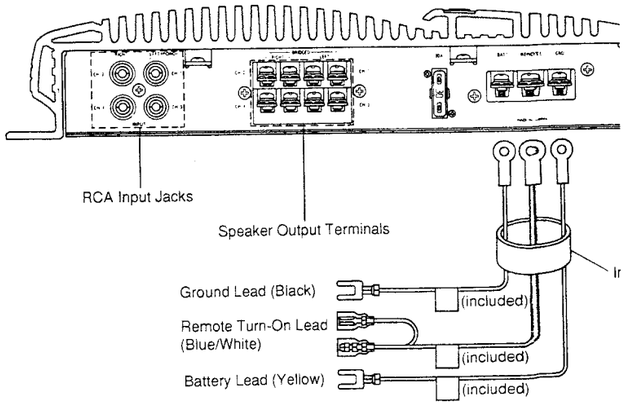
① Acoustic Compensation Switch
② Input Gain Adjustment Control (Channels 1/2)
③ Active Dividing Network Mode Selector Switch (Channels 1/
④ Input Mode Selector Switch (Channel 1/2)
⑤ Input Gain Adjustment Control (Channels 3/4)

⑥ Active Dividing Network Mode Selector Switch (Channels 3/
⑦ Input Mode Selector Switch (Channels 3/4)
⑧ Input Channel Selector Switch
⑨ RCA Input Jacks (Channels 1/2)
⑩ Speaker Output Terminals (Channels 1/2)

⑪ Fuse Block
⑫ Battery Lead Terminal
⑬ Remote Turn-On Lead Terminal
⑭ Ground Lead Terminal
⑮ Speaker Output Terminal (Channels 3/4)

⑯ RCA Input Jacks (Channels 3/4)
⑰ Status Monitor

CONNECTIONS



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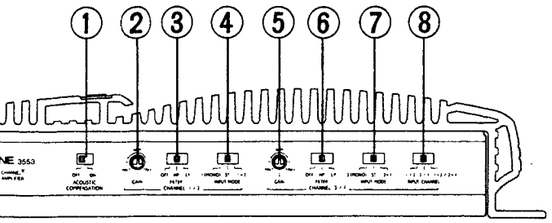

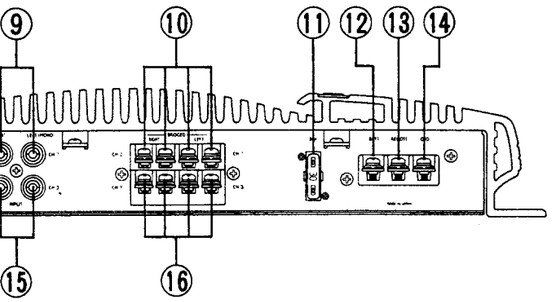

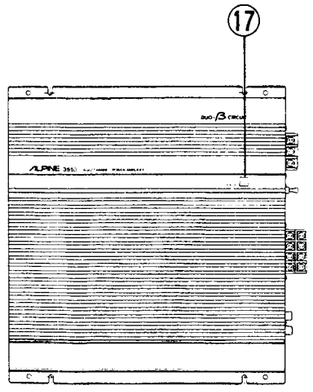

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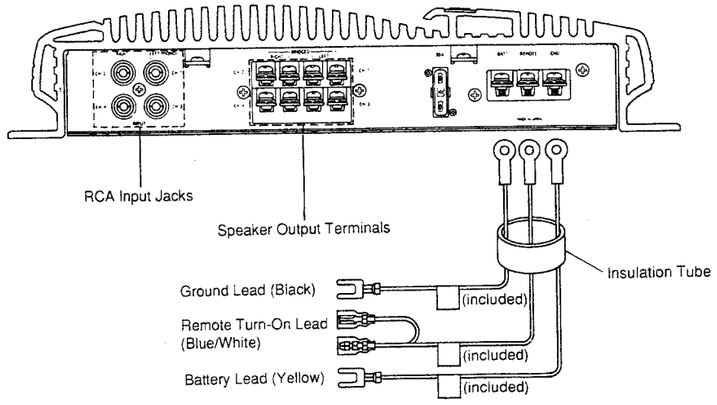
⑥ Active Dividing Network Mode Selector Switch (Channels 3/4)
⑦ Input Mode Selector Switch (Channels 3/4)
⑧ Input Channel Selector Switch
⑨ RCA Input Jacks (Channels 1/2)
⑩ Speaker Output Terminals (Channels 1/2)

⑪ Fuse Block
⑫ Battery Lead Terminal
⑬ Remote Turn-On Lead Terminal
⑭ Ground Lead Terminal
⑮ Speaker Output Terminal (Channels 3/4)

⑯ RCA Input Jacks (Channels 3/4)
⑰ Status Monitor

CONNECTIONS



CONNECTIONS

Before making connections, be sure to turn the power off to all audio components. Insulation tubes for the speaker leads and the power supply leads are supplied with the 3553, route the speaker leads and the power supply leads separately through these tubes.

- **CAUTION:**
  Always keep the CH 3/4 RCA inputs of the 3553 connected to a signal source while the amplifier is in operation. If CH 3 and 4 inputs are not tied to the signal source, the source and the amp will not have a common ground reference point, and high output distortion may result. This is due to special grounding characteristics that have been implemented in the 3553 to ensure an installation-noise-free operation.
- **Speaker Output Terminals**
  The 3553 has two sets of speaker outputs. Be sure to observe correct speaker output connections and phasing. In the stereo mode connect the right speaker output to the right speaker and the left to left. Connect the positive output to the positive speaker terminal and the negative to negative. In the bridged mode, connect the left positive to the positive terminal on the speaker and the right negative to the negative terminal of the speaker. Do not use the speaker (–) terminal commonly for the right and left speakers or connect it to the vehicle's chassis ground.
  NOTE:
  Do not connect speaker leads together or to chassis ground.
- **RCA Input Jacks**
  Connect these jacks to the line out leads on your head unit using RCA extension cables (sold separately). Be sure to observe correct channel connections; Left to Left, Right to Right, Front to Front, and Rear to Rear.
- **Ground Lead (Black)**
  Connect this lead securely to a clean, bare metal spot on the vehicle's chassis. Verify this point to be a true ground by checking for continuity between that point and the negative (–) terminal of the vehicle's battery. Ground all your audio components to the same point on the chassis to prevent ground loops.
- **Battery Lead (Yellow)**
  Connect this lead directly to the positive (+) terminal of the vehicle's battery. *Do not connect this lead to wiring in the vehicle's electrical system.* Be sure to add a 40 amp (or two 20 A fuses in parallel) as close as possible to the battery's positive (+) terminal. This fuse will protect your vehicle's electrical system in case of a short circuit. If you need to extend this lead, the wire gauge should be 8 AWG or larger.

CONNECTIONS

- **Remote Turn-On Lead (Blue/White)**
  Connect this lead to the remote turn-on or power antenna (positive trigger, (+) 12V only) lead of your head unit.

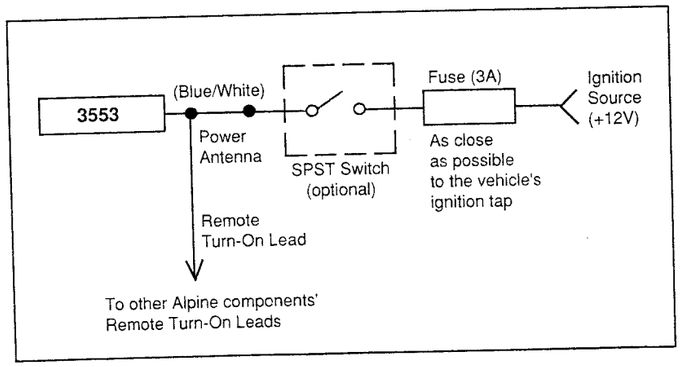
  Please check your head unit for the conditions listed below:

  a. The head unit does not have a remote turn-on or power antenna lead.

  b. The head unit's power antenna lead is activated only when the radio is on (turns off in the tape or CD Mode).

  c. The head unit's power antenna lead is logic level output (+) 5V, negative trigger (grounding type), or cannot sustain (+) 12V when connected to other equipment in addition to the vehicle's power antenna. If any of the above conditions exist, the remote turn-on lead of your 3553 must be connected to a switched power source (ignition) in the vehicle. Be sure to use a 3A fuse as close as possible to this ignition tap. Using this connection method, the 3553 will turn on and stay on as long as the ignition switch is on.

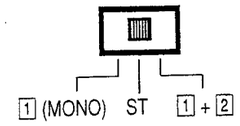
  If this is objectionable, a SPST (Single pole, Single Throw) switch, in addition to the 3A fuse mentioned above, may be installed in-line on the 3553 turn-on lead. This switch will then be used to turn on (and off) the 3553. Therefore, the switch should be mounted so that is accessible by the driver. Make sure the switch is turned off when the vehicle is not running. Otherwise, the amplifier will remain on and drain the battery.



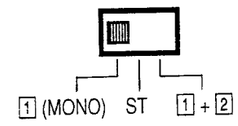
SWITCH SETTINGS

Input Mode Selector Switches ④ and ⑦
The switch modes shown are for CH1/2. Same explanations apply to mode selection for CH3/4.

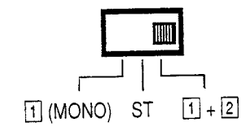
a) Set to the "ST" position (center) when the two channels are used in stereo.



b) Set to the "1 (MONO)" position when the two channels are used for one channel of a stereo or bridged system.

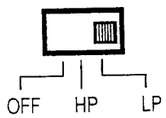


c) Set to the "1 + 2" position when the two channels are used for a subwoofer system which uses the right channel and left channel signals summed.

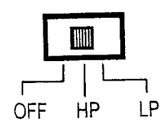


Active Dividing Network Mode Selector Switches ③ and ⑥

a) Set to the "LP" position when the amplifier is used for the low-pass (subwoofer) system. The frequencies higher than 80 Hz will be cut (at a rate of 18 dB per octave).



b) Set to the "HP" position when the 3553 is used for the high-pass (tweeter/ midrange) system. The frequencies lower than 80 Hz will be cut (at a rate of 18 dB per octave).



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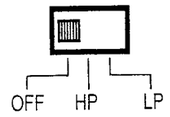
SWITCH SETTINGS

c) Set to the "OFF" position when the 3553 is used for the regular ster system with full-range speakers. The full bandwidth will be output w cutting the high or low frequencies



Input Gain Adjustment Controls ② and ⑤
After setting your head unit's volume control 1/4 of a turn down from maximum output level, rotate the Input Gain Adjustment Controls ② an with a #0 flat blade screwdriver and adjust the input gain to the point w there is maximum volume with no distortion.

Status Monitor
This indicator lights in green when the power is on. The 3553 has b protection circuitry. If, for some reason, this protection circuit is activat the indicator turns orange. If this happens, turn the system off, find the of the problem and remedy the situation. This includes checking all yo connections and wiring. If the indicator remains orange when the syste turned on, consult your authorized Alpine dealer.

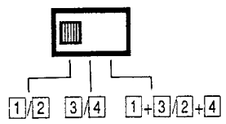
NOTE:
The indicator will illuminate in orange for a few seconds when the power is turned on as the turn on muting circuit is activated. This is normal.

Input Channel Selector Switch ⑧ (CH 3/4)

a) Setting this switch to 1/2 will send the signal at the inputs of CH CH3/4 of the 3553. This eliminate the need for Y-adaptors when us head unit with a single pair of pre-amp output.

b) Set this switch to 3/4 to have the inputs of CH3/4 accept indepen input signals. An example of this application would be the use of a l unit with dual pre-amp outputs.

c) Setting this switch to 1+3/2+4 will sum the CH1 & CH3 input a send it to CH3 while the CH2 & CH4 inputs are summed and sent t CH4. When used with a dual-preamp output head unit, this will prov non-fading (constant bass) subwoofer output with fadable front and output going to a separate Satellite amplifier.



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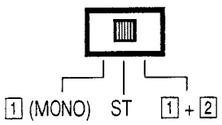
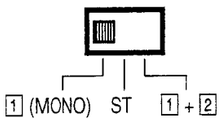
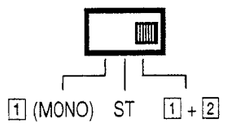


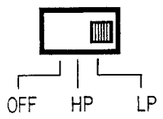
] (MONO)" position when the two channels are used for one
stereo or bridged system.



] + 2]" position when the two channels are used for a
ystem which uses the right channel and left channel signals



Network Mode Selector Switches ③ and ⑥
P" position when the amplifier is used for the low-pass
system. The frequencies higher than 80 Hz will be cut (at a
per octave).



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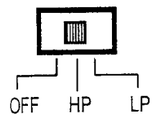
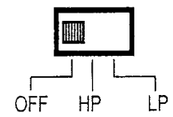


SWITCH SETTINGS

c) Set to the "OFF" position when the 3553 is used for the regular stereo system with full-range speakers. The full bandwidth will be output without cutting the high or low frequencies



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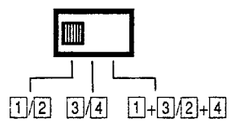
c) Setting this switch to 1+3/2+4 will sum the CH1 & CH3 input and send it to CH3 while the CH2 & CH4 inputs are summed and sent to CH4. When used with a dual-preamp output head unit, this will provide a non-fading (constant bass) subwoofer output with fadable front and rear output going to a separate Satellite amplifier.



SWITCH SETTINGS

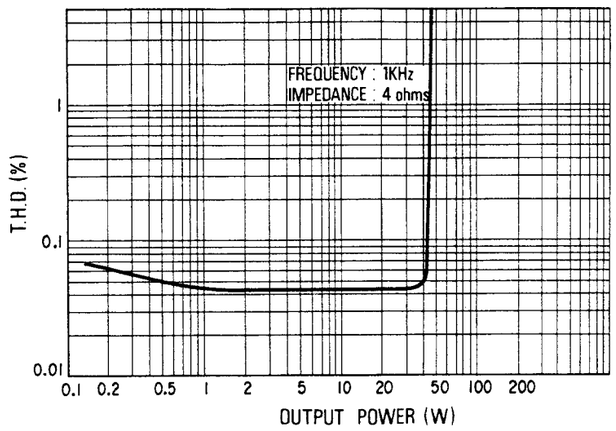
Acoustic Compensation Selector Switch

a) Turn this switch on to compensate for the loss of low bass and to reduce midbass boominess.

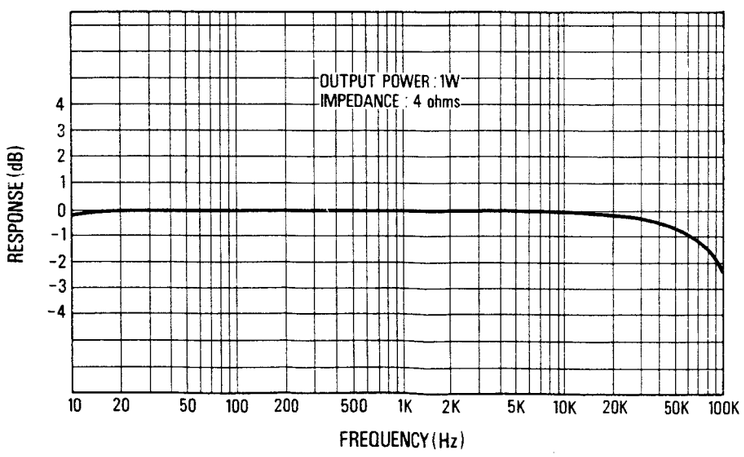
b) Listen to the system with the switch in both the ON and OFF positions. Since the response of the system can vary depending on vehicle type, interior size, and other characteristics of the listening area, choose the position that provides the best sound reproduction.

CHARACTERISTIC CURVES

POWER VS. DISTORTION CURVE



FREQUENCY RESPONSE CURVE



Disassembly Instructions

1. Removal of AMP P.C.Board

(1) After removal of Bottom Cover, remove twenty-nine screws marked "●", and remove Solder A and a screw marked "□" as shown in Figure 1.

(2) AMP P.C.Board with Rear Chassis and Power P.C.Board, Output P.C.Board, RCA P.C.Board can be removed completely.

(3) After removal of a Fuse, remove nine screws marked "■" and two Hooks as shown in Figure 2 and 3.

(4) After removal of Rear Chassis, remove Solder B as shown in Figure 2.

(5) AMP P.C.Board with Power P.C.Board, Output P.C.Board, RCA P.C.Board and Acoustic P.C.Board can be removed completely.

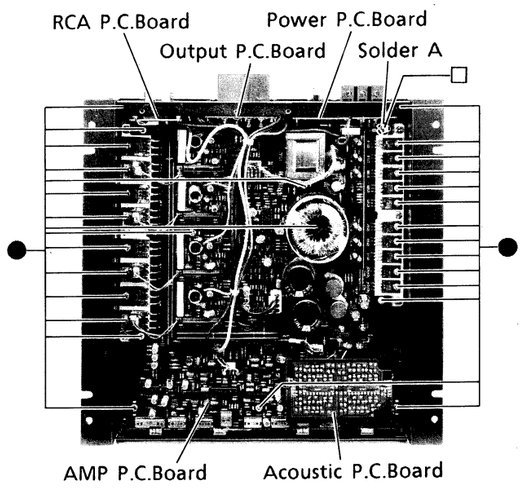


Figure 1

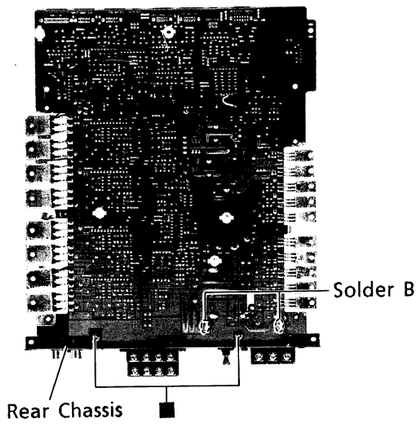


Figure 2

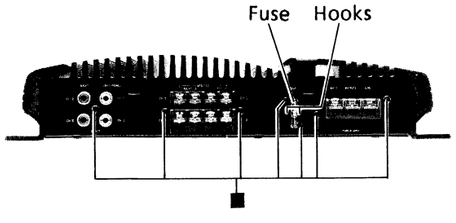
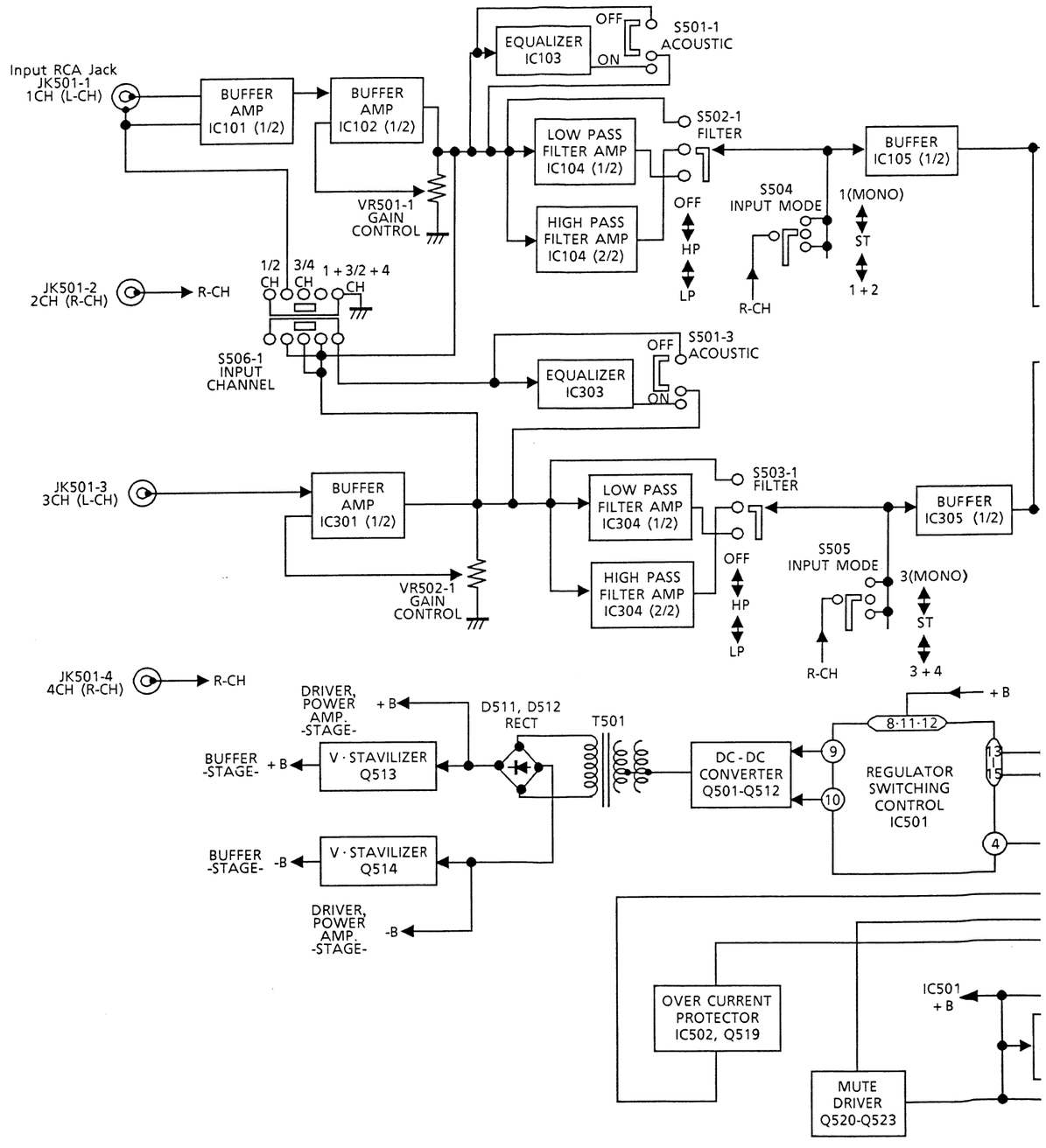


Figure 3

Block Diagram



oard
der A

Board

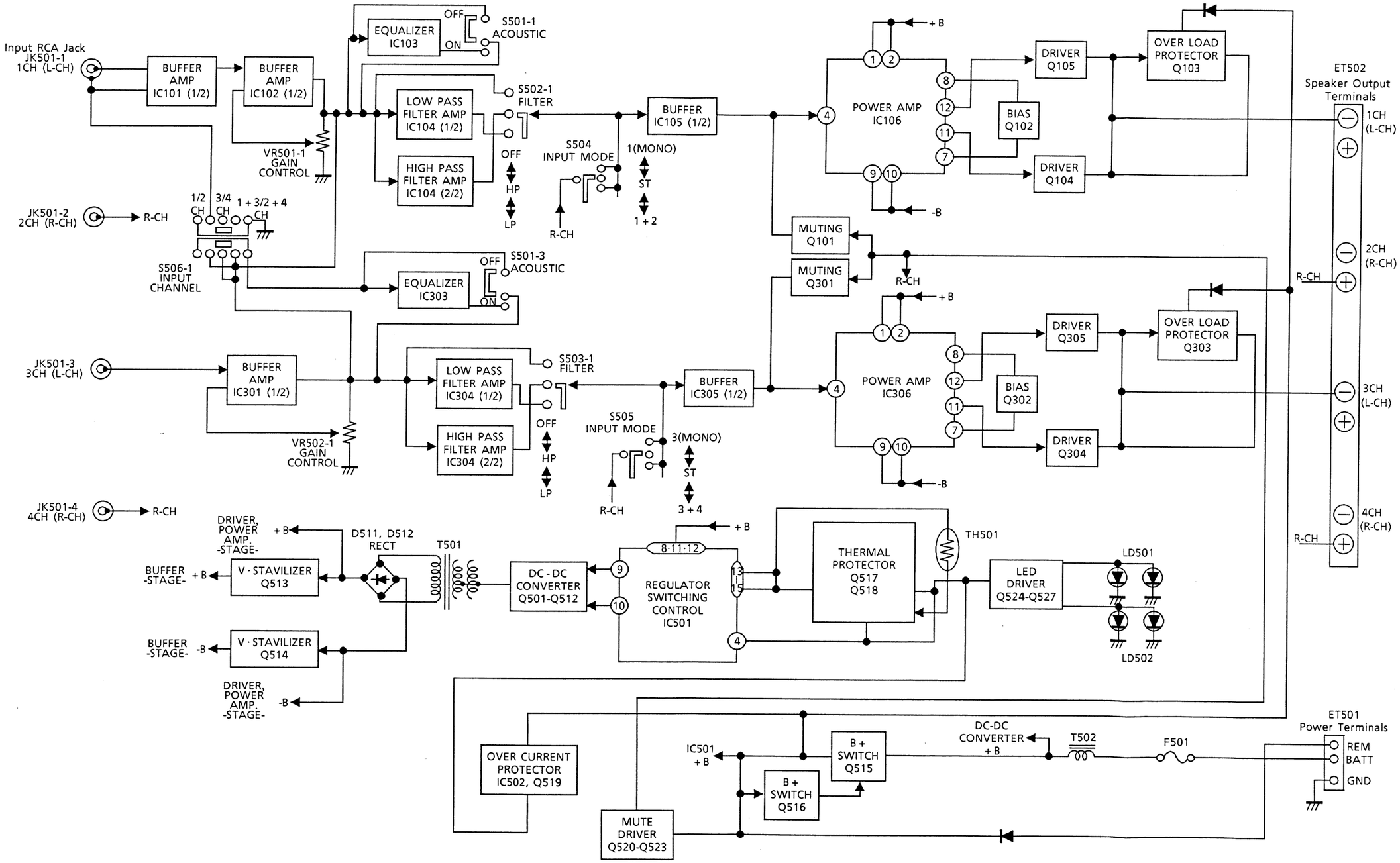
Figure 1

Solder B

Figure 2

Figure 3

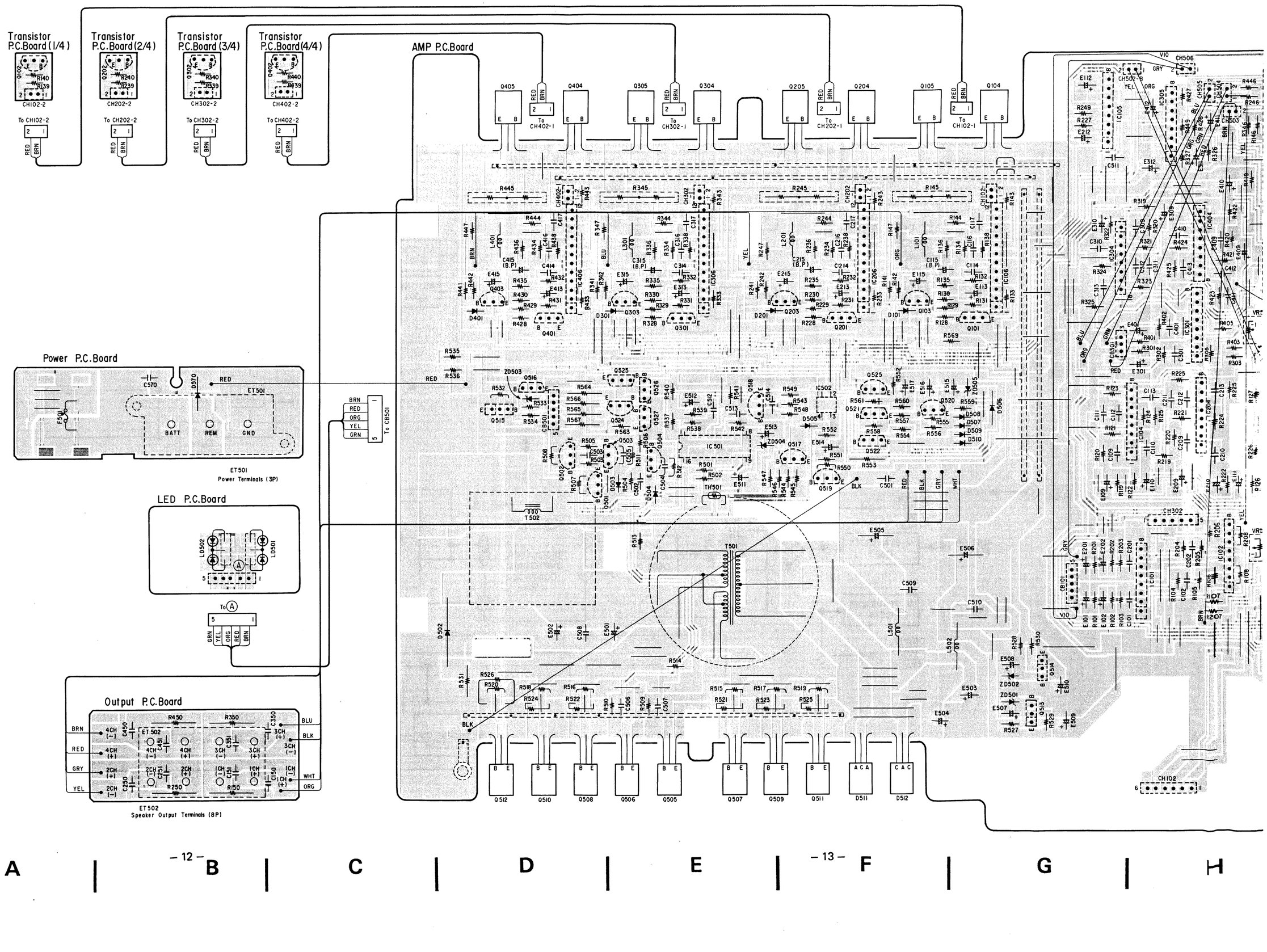
Block Diagram



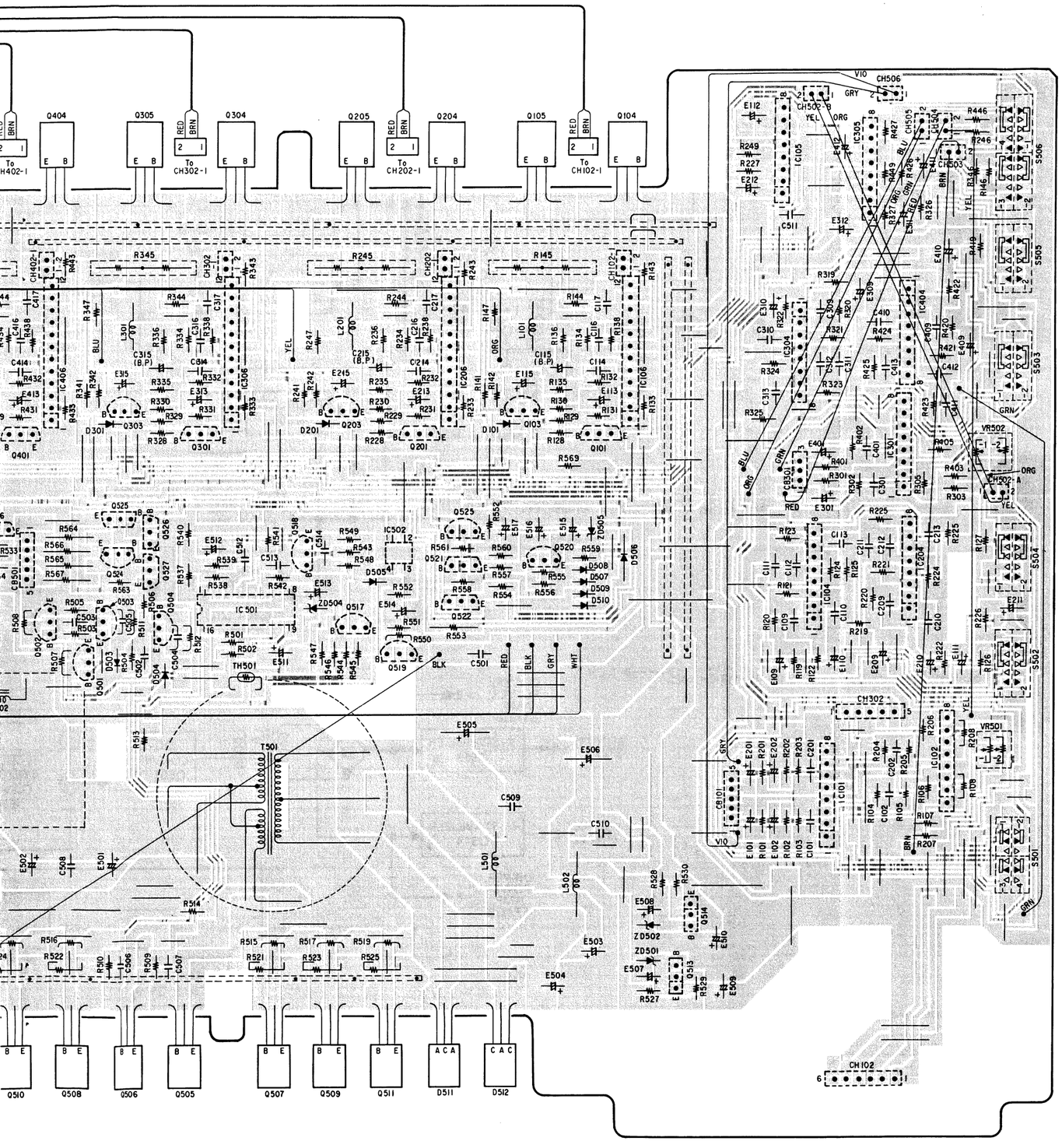
3553 3553

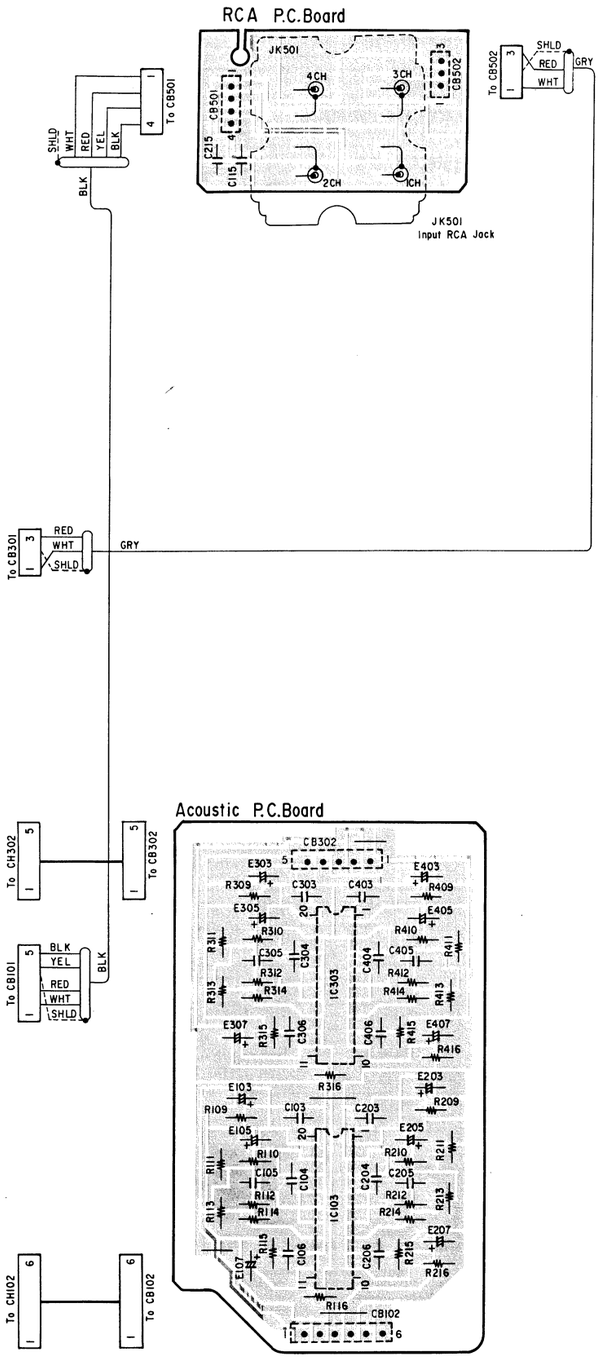
Parts Layout on P.C.Boards and Wiring Diagram

All P.C.Boards viewed from soldered side.



ll P.C.Boards viewed from soldered side.

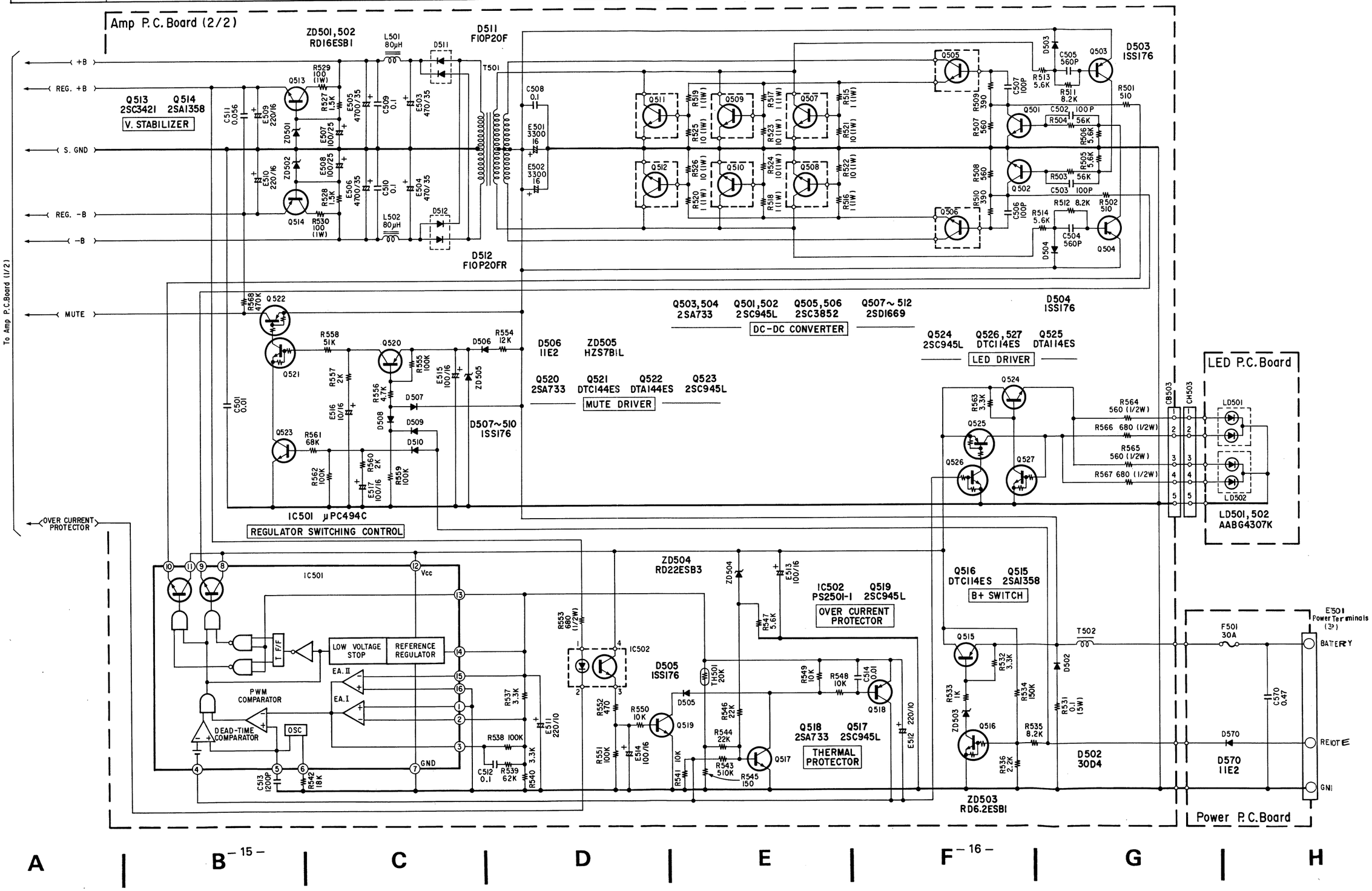




Schematic Diagram (1/2)

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000

IC	IC501	IC502
Transistor (Q)	Q513 Q514 Q522 Q521 Q523 Q520	Q511 Q512 Q509 Q510 Q507 Q508 Q505 Q506 Q501 Q502 Q503 Q504 Q515 Q516 Q525 Q524 Q527 Q526 Q519 Q517 Q518



are in ohms. K= 1,000 M= 1,000,000
es are in microfarads. P= 1/1,000,000

IC502

Pin	Voltage
1	15.2V
2	14.5V
3	14.4V
4	14.3V

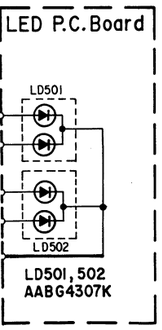
IC501

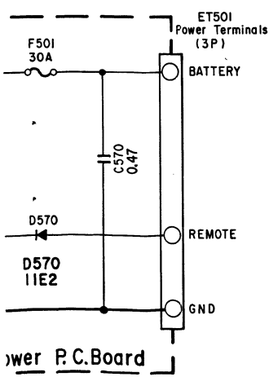
Pin	Voltage
1	0V
2	2.5V
3	0.1V
4	0.01V
5	1.7V
6	3.76V
7	0V
8	14.3V
9	6V
10	6V
11	14.3V
12	14.3V
13	5V
14	5V
15	5V
16	0V

	B	C	E
Q501	–0.7V	1.5V	0V
Q502	–0.7V	1.5V	0V
Q503	15V	7.4V	14.4V
Q504	15V	7.4V	14.4V
Q505	0.8V	14.4V	0.6V
Q506	0.8V	14.4V	0.6V
Q507	0.36V	14.4V	0V
Q508	0.36V	14.4V	0V
Q509	0.36V	14.4V	0V
Q510	0.36V	14.4V	0V
Q511	0.36V	14.4V	0V
Q512	0.36V	14.4V	0V
Q513	15.9V	23.6V	15.3V
Q514	–15.9V	–23.6V	–15.3V
Q515	13.7V	14.3V	14.4V
Q516	2.7V	0.07V	0V
Q517	0.035V	5V	0V
Q518	5V	0.01V	5V
Q519	0V	4.8V	0V
Q520	6.8V	0.01V	6.9V
Q521	0.01V	14.3V	0.01V
Q522	14.3V	14.4V	–14.3V
Q523	0.6V	0.01V	0V
Q524	13.9V	14.3V	13.2V
Q525	0.01V	0.005V	14.3V
Q526	0.01V	0.01V	0V
Q527	0.005V	13.9V	0V

● Measuring Conditions

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : No Signal Input





Schematic Diagram (2/2)

IC	IC101 IC301	IC102	IC103 IC303	IC104 IC204 IC304 IC404	IC105 IC305	IC106 IC206 IC306 IC406
Transistor (Q)				Q101 Q201 Q301 Q401		

RCA P.C.Board

Amp P.C.Board (1/2)

Acoustic P.C.Board

IC101,102 NJM4580L BUFFER AMP

IC103 M5243P EQUALIZER

IC104,204 NJM4580L

IC105 NJM4580L BUFFER AMP

IC301 NJM4580L BUFFER AMP

IC303 M5243P EQUALIZER

IC304,404 NJM4580L

IC305 NJM4580L BUFFER AMP

HIGH PASS FILTER

LOW PASS FILTER

Q101 2SC3327 MUTING

Q201 2SC3327 MUTING

Q301 2SC3327 MUTING

Q401 2SC3327 MUTING

IC106 μPC1270H POWER AMP

IC206 μPC1270H POWER AMP

IC306 μPC1270H POWER AMP

IC406 μPC1270H POWER AMP

STANDARD BIAS

CONSTANT CURRENT LOAD

PROTECTOR

DIFFERENTIAL AMPLIFIER

PRE DRIVE

CURRENT MIRROR LOAD

TEMPERATURE COMPENSATION

S501-1 ACOUSTIC OFF ON

S501-2 ACOUSTIC OFF ON

S501-3 ACOUSTIC OFF ON

S501-4 ACOUSTIC OFF ON

S502 FILTER SW OFF HP LP

S503 FILTER SW OFF HP LP

S504 INPUT-MODE SW I (MONO) ST I+2 (MONO)

S505 INPUT MODE SW I (MONO) ST I+2 (MONO)

S506 INPUT-CH SW 1/2 CH 3/4 CH I+3/2+4 CH

JK501-1 1 CH

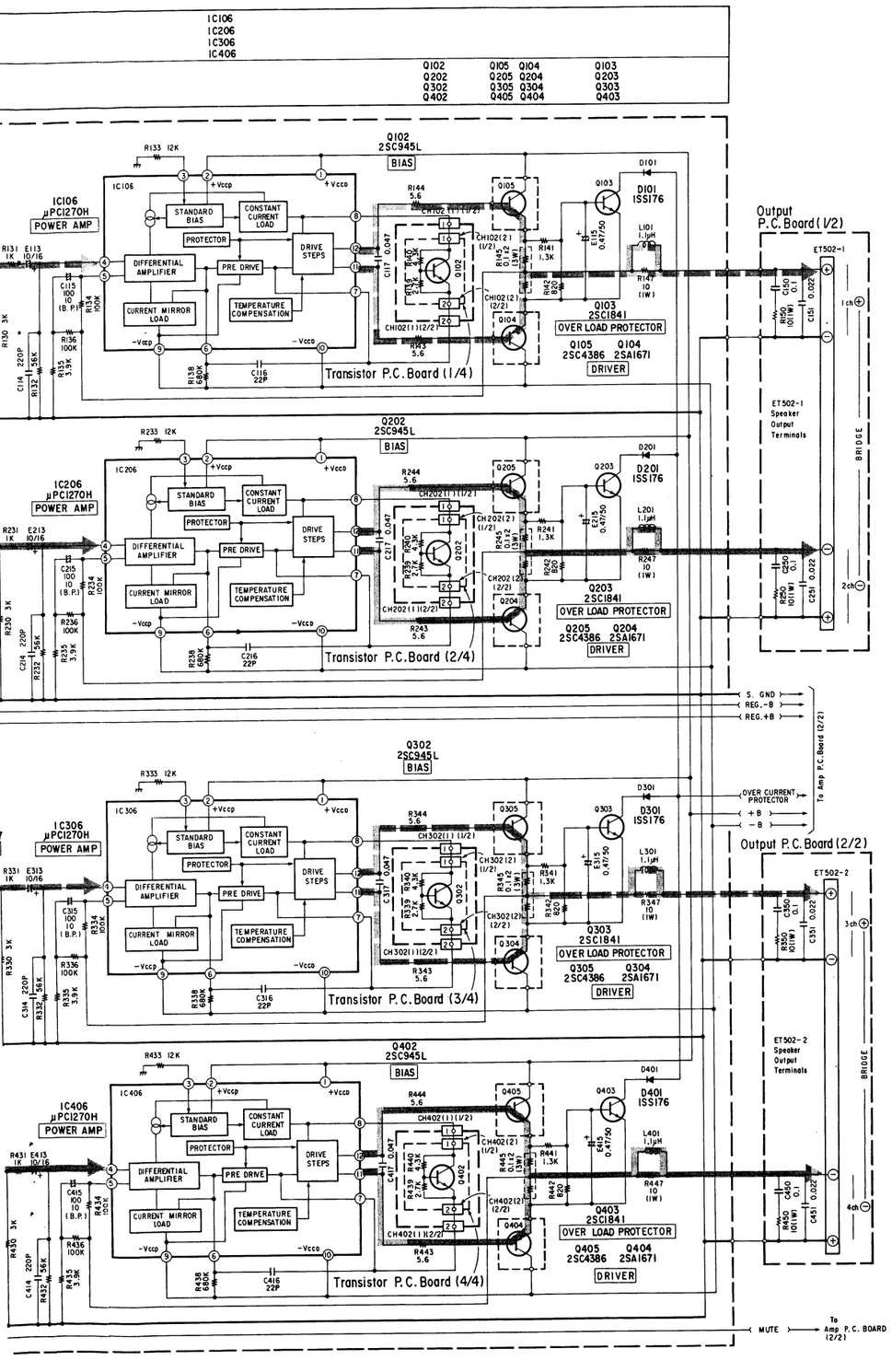
JK501-2 2 CH

JK501 Input RCA Jack

JK501-3 3 CH

JK501-4 4 CH

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000



IC	IC104	IC204	IC304	IC404
Pin	Voltage	Voltage	Voltage	Voltage
1	0V	0V	0V	0V
2	0V	0V	0V	0V
3	0V	0V	0V	0V
4	–15.3V	–15.3V	–15.3V	–15.3V
5	0V	0V	0V	0V
6	0V	0V	0V	0V
7	0V	0V	0V	0V
8	15.3V	15.3V	15.3V	15.3V

IC	IC106	IC206	IC306	IC406
Pin	Voltage	Voltage	Voltage	Voltage
1	27.9V	27.9V	27.9V	27.9V
2	27.9V	27.9V	27.9V	27.9V
3	27.9V	27.9V	27.9V	27.9V
4	0.12V	0.12V	0.12V	0.12V
5	0.12V	0.12V	0.12V	0.12V
6	–26.2V	–26.2V	–26.2V	–26.2V
7	–1.2V	–1.2V	–1.2V	–1.2V
8	0.48V	0.48V	0.48V	0.48V
9	–27.9V	–27.9V	–27.9V	–27.9V
10	–27.9V	–27.9V	–27.9V	–27.9V
11	–0.6V	–0.6V	–0.6V	–0.6V
12	0.6V	0.6V	0.6V	0.6V

IC	IC101	IC102	IC105	IC301	IC305
Pin	Voltage	Voltage	Voltage	Voltage	Voltage
1	0V	0V	0V	0V	0V
2	0V	0V	0V	0V	0V
3	0V	0V	0V	0V	0V
4	–15.3V	–15.3V	–15.3V	–15.3V	–15.3V
5	0V	0V	0V	0V	0V
6	0V	0V	0V	0V	0V
7	0V	0V	0V	0V	0V
8	15.3V	15.3V	15.3V	15.3V	15.3V

- Measuring Conditions

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : No Signal Input

IC	IC103	IC303
Pin	Voltage	Voltage
1	5.5V	5.5V
2	4.9V	4.9V
3	5.5V	5.5V
4	4.9V	4.9V
5	5.5V	5.5V
6	4.9V	4.9V
7	5.6V	5.6V
8	5.6V	5.6V
9	5.6V	5.6V
10	0V	0V
11	15.3V	15.3V
12	5.6V	5.6V
13	5.6V	5.6V
14	5.6V	5.6V
15	4.9V	4.9V
16	5.5V	5.5V
17	4.9V	4.9V
18	5.5V	5.5V
19	4.9V	4.9V
20	5.5V	5.5V

	B	C	E
Q101	14.36V	0V	0V
Q102	0.6V	0.48V	–1.2V
Q103	0.01V	13.9V	–0.01V
Q104	0.49V	–27.9V	–0.1V
Q105	0.49V	27.9V	–0.1V
Q201	14.36V	0V	0V
Q202	0.6V	0.48V	–1.2V
Q203	0.01V	13.9V	–0.01V
Q204	0.49V	–27.9V	–0.1V
Q205	0.49V	27.9V	–0.1V
Q301	14.36V	0V	0V
Q302	0.6V	0.48V	–1.2V
Q303	0.01V	13.9V	–0.01V
Q304	0.49V	–27.9V	–0.1V
Q305	0.49V	27.9V	–0.1V
Q401	14.36V	0V	0V
Q402	0.6V	0.48V	–1.2V
Q403	0.01V	13.9V	–0.01V
Q404	0.49V	–27.9V	–0.1V
Q405	0.49V	27.9V	–0.1V

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. =	Resistor	CAP. =	Capacitor
C.F. =	Carbon Film	ELY. =	Electrolytic
M.F. =	Metal Film	CER. =	Ceramic
M.O. =	Metal Oxide Film	MYL. =	Mylar
M.P. =	Metal Plate	TAN. =	Tantalum
TR. =	Transistor	POLY. =	Polystyrol
TRANS. =	Transformer	PP. =	Polypropylene
CP. =	Chip	PLT. =	Polyethylene
		PF. =	Polyester Film

AMP P. C. Board

IC's

Symbol No.	Part No.	Description
IC101	51T25576W02	NJM4580L
IC102	51T25576W02	NJM4580L
IC104	51T25576W02	NJM4580L
IC105	51T25576W02	NJM4580L
IC106	51E06841S01	μPC1270H
IC204	51T25576W02	NJM4580L
IC206	51E06841S01	μPC1270H
IC301	51T25576W02	NJM4580L
IC304	51T25576W02	NJM4580L
IC305	51T25576W02	NJM4580L
IC306	51E06841S01	μPC1270H
IC404	51T25576W02	NJM4580L
IC406	51E06841S01	μPC1270H
IC501	51T70759F01	μPC494C
IC502	51E09178S01	PS2501-1

Transistors

Symbol No.	Part No.	Description
Q101	48E06355S01	2SC3327
Q103	48E08295S01	2SC1841
Q104	48E06360S04	2SA1671
Q105	48E06361S04	2SC4386
Q201	48E06355S01	2SC3327
Q203	48E08295S01	2SC1841
Q204	48E06360S04	2SA1671
Q205	48E06361S04	2SC4386
Q301	48E06355S01	2SC3327
Q303	48E08295S01	2SC1841
Q304	48E06360S04	2SA1671
Q305	48E06361S04	2SC4386
Q401	48E06355S01	2SC3327
Q403	48E08295S01	2SC1841
Q404	48E06360S04	2SA1671
Q405	48E06361S04	2SC4386
Q501	48S44578J02	2SC945L
Q502	48S44578J02	2SC945L
Q503	48T40081T02	2SA733
Q504	48T40081T02	2SA733
Q505	48T82883F01	2SC3852
Q506	48T82883F01	2SC3852
Q507	48E06359S03	2SD1669
Q508	48E06359S03	2SD1669
Q509	48E06359S03	2SD1669
Q510	48E06359S03	2SD1669
Q511	48E06359S03	2SD1669
Q512	48E06359S03	2SD1669
Q513	48T69176F02	2SC3421
Q514	48T70761F01	2SA1358
Q515	48T70761F01	2SA1358
Q516	48E09189S02	DTC114ES
Q517	48S44578J02	2SC945L
Q518	48T40081T02	2SA733
Q519	48S44578J02	2SC945L
Q520	48T40081T02	2SA733
Q521	48E08748S01	DTC144ES
Q522	48E08748S02	DTA144ES
Q523	48S44578J02	2SC945L
Q524	48S44578J02	2SC945L
Q525	48E09189S01	DTA114ES
Q526	48E09189S02	DTC114ES
Q527	48E09189S02	DTC114ES

Diodes

Symbol No.	Part No.	Description
D101	48T58583F01	1SS176
D201	48T58583F01	1SS176
D301	48T58583F01	1SS176
D401	48T58583F01	1SS176
D502	48T68079F03	30D4
D503	48T58583F01	1SS176
D504	48T58583F01	1SS176
D505	48T58583F01	1SS176
D506	48E02081S01	11E2
D507	48T58583F01	1SS176
D508	48T58583F01	1SS176
D509	48T58583F01	1SS176
D510	48T58583F01	1SS176
D511	48E09190S01	F10P20F
D512	48E09190S02	F10P20FR

Symbol No.	Part No.	Description
ZD501	48T68702F59	Zener, RD16ESB1
ZD502	48T68702F59	Zener, RD16ESB1
ZD503	48T68702F29	Zener, RD6.2ESB1
ZD504	48T68702F70	Zener, RD22ESB3
ZD505	48T25766W13	Zener, HZS7B1L
Thermistor		
TH501	48E06365S01	20Kohm
Switches		
S501	40E09137S01	SSSF14 (ACOUSTIC COMPENSATION)
S502	40E09138S01	SSSF12 (FILTER)
S503	40E09138S01	SSSF12 (FILTER)
S504	40E09138S01	SSSF12 (INPUT MODE)
S505	40E09138S01	SSSF12 (INPUT MODE)
S506	40E09136S01	SSSF14 (INPUT CHANNEL)
Coils		
L101	24E06338S01	1.1μH
L201	24E06338S01	1.1μH
L301	24E06338S01	1.1μH
L401	24E06338S01	1.1μH
L501	24E07941S01	Choke
L502	24E07941S01	Choke
Transformers		
T501	25E06340S01	Power
T502	25E06342S01	Choke

Symbol No.	Part No.	Description
Capacitors		
C101	21E07287S01	CER., 47pF
E101	23E07084S01	ELY., 10μF/16V
C102	21E07287S01	CER., 47pF
E102	23E07084S01	ELY., 10μF/16V
C109	08E09008S10	PF., 0.22μF
E109	23E06854S01	ELY., 10μF/16V
C110	08E09008S14	PF., 0.047μF
E110	23E06854S01	ELY., 10μF/16V
C111	08E09008S06	PF., 0.1μF
E111	23E06854S01	ELY., 10μF/16V
C112	08E09008S06	PF., 0.1μF
E112	23E06854S01	ELY., 10μF/16V
C113	08E09008S11	PF., 0.27μF
E113	23E06854S01	ELY., 10μF/16V
C114	21E06324S01	CER., 220pF
C115	23E06330S01	ELY., (B.P) 100μF/10V
E115	23E04826S01	ELY., 0.47μF/50V
C116	21E06638S01	CER., 22pF
C117	08E09008S14	PF., 0.047μF
C201	21E07287S01	CER., 47pF
E201	23E07084S01	ELY., 10μF/16V
C202	21E07287S01	CER., 47pF
E202	23E07084S01	ELY., 10μF/16V
C209	08E09008S10	PF., 0.22μF
E209	23E06854S01	ELY., 10μF/16V
C210	08E09008S14	PF., 0.047μF
E210	23E06854S01	ELY., 10μF/16V
C211	08E09008S06	PF., 0.1μF
E211	23E06854S01	ELY., 10μF/16V
C212	08E09008S06	PF., 0.1μF
E212	23E06854S01	ELY., 10μF/16V
C213	08E09008S11	PF., 0.27μF
E213	23E06854S01	ELY., 10μF/16V
C214	21E06324S01	CER., 220pF
C215	23E06330S01	ELY., (B.P) 100μF/10V
E215	23E04826S01	ELY., 0.47μF/50V
C216	21E06638S01	CER., 22pF
C217	08E09008S14	PF., 0.047μF
C301	21E06324S01	CER., 220pF
E301	23E07084S01	ELY., 10μF/16V
C309	08E09008S10	PF., 0.22μF
E309	23E06854S01	ELY., 10μF/16V
C310	08E09008S14	PF., 0.047μF
E310	23E06854S01	ELY., 10μF/16V
C311	08E09008S06	PF., 0.1μF
E311	23E06854S01	ELY., 10μF/16V
C312	08E09008S06	PF., 0.1μF
E312	23E06854S01	ELY., 10μF/16V
C313	08E09008S11	PF., 0.27μF
E313	23E06854S01	ELY., 10μF/16V

Symbol No.	Part No.	Description
C314	21E06324S01	CER., 220pF
C315	23E06330S01	ELY., (B.P) 100μF/10V
E315	23E04826S01	ELY., 0.47μF/50V
C316	21E06638S01	CER., 22pF
C317	08E09008S14	PF., 0.047μF
C401	21E06324S01	CER., 220pF
E401	23E07084S01	ELY., 10μF/16V
C409	08E09008S10	PF., 0.22μF
E409	23E06854S01	ELY., 10μF/16V
C410	08E09008S14	PF., 0.047μF
E410	23E06854S01	ELY., 10μF/16V
C411	08E09008S06	PF., 0.1μF
E411	23E06854S01	ELY., 10μF/16V
C412	08E09008S06	PF., 0.1μF
E412	23E06854S01	ELY., 10μF/16V
C413	08E09008S11	PF., 0.27μF
E413	23E06854S01	ELY., 10μF/16V
C414	21E06324S01	CER., 220pF
C415	23E06330S01	ELY., (B.P) 100μF/10V
E415	23E04826S01	ELY., 0.47μF/50V
C416	21E06638S01	CER., 22pF
C417	08E09008S14	PF., 0.047μF
C501	08E09151S02	PF., 0.01μF
E501	23E08297S02	ELY., 3300μF/16V
C502	21E06323S01	CER., 100pF
E502	23E08297S02	ELY., 3300μF/16V
C503	21E06323S01	CER., 100pF
E503	23E08302S01	ELY., 470μF/35V
C504	21E06325S01	CER., 560pF
E504	23E08302S01	ELY., 470μF/35V
C505	21E06325S01	CER., 560pF
E505	23E09187S01	ELY., 4700μF/35V
C506	21E06323S01	CER., 100pF
E506	23E09187S01	ELY., 4700μF/35V
C507	21E06323S01	CER., 100pF
E507	23E08794S01	ELY., 100μF/25V
C508	08E09008S06	PF., 0.1μF
E508	23E08794S01	ELY., 100μF/25V
C509	08E09008S06	PF., 0.1μF
E509	23E08793S03	ELY., 220μF/16V
C510	08E09008S06	PF., 0.1μF
E510	23E08793S03	ELY., 220μF/16V
C511	08E09008S01	PF., 0.056μF
E511	23E04836S01	ELY., 220μF/10V
C512	08E09008S06	PF., 0.1μF
E512	23E04836S01	ELY., 220μF/10V
C513	08E09151S06	PF., 1200pF
E513	23E04833S01	ELY., 100μF/16V
C514	08E09151S02	PF., 0.01μF
E514	23E04833S01	ELY., 100μF/16V
E515	23E04833S01	ELY., 100μF/16V
E516	23E06854S01	ELY., 10μF/16V

Symbol No.	Part No.	Description
E517	23E04833S01	ELY., 100μF/16V
Resistors		
R145	17E09609S01	Cement, 0.1ohm 3W×2
R147	06E06383S01	SPR, 10 ohm 1W
R245	17E09609S01	Cement, 0.1ohm 3W×2
R247	06E06383S01	SPR, 10 ohm 1W
R345	17E09609S01	Cement, 0.1ohm 3W×2
R347	06E06383S01	SPR, 10 ohm 1W
R445	17E09609S01	Cement, 0 1ohm 3W×2
R447	06E06383S01	SPR, 10 ohm 1W
R515	06E06382S01	SPR, 1 ohm 1W
R516	06E06382S01	SPR, 1 ohm 1W
R517	06E06382S01	SPR, 1 ohm 1W
R518	06E06382S01	SPR, 1 ohm 1W
R519	06E06382S01	SPR, 1 ohm 1W
R520	06E06382S01	SPR, 1 ohm 1W
R521	06E06383S01	SPR, 10 ohm 1W
R522	06E06383S01	SPR, 10 ohm 1W
R523	06E06383S01	SPR, 10 ohm 1W
R524	06E06383S01	SPR, 10 ohm 1W
R525	06E06383S01	SPR, 10 ohm 1W
R526	06E06383S01	SPR, 10 ohm 1W
R529	06E06384S01	SPR, 100 ohm 1W
R530	06E06384S01	SPR, 100 ohm 1W
R531	17E08299S01	Cement, 0.1ohm 5W
R553	06E03962S01	CF., 680 ohm 1/2W
R564	06E07006S02	CF., 560 ohm 1/2W
R565	06E07006S02	CF., 560 ohm 1/2W
R566	06E03962S01	CF., 680 ohm 1/2W
R567	06E03962S01	CF., 680 ohm 1/2W
VR501	18E09602S01	Variable, 10K ohm×2 (GAIN CONTROL)
VR502	18E09602S01	Variable, 10K ohm ×2 (GAIN CONTROL)

Acoustic P. C. Board

IC's		
IC103	51T25431W01	M5243P
IC303	51T25431W01	M5243P

Symbol No.	Part No.	Description
Capacitors		
C103	08E09008S11	PF., 0.27μF
E103	23E07086S01	ELY., 4.7μF/25V
C104	08E09008S03	PF., 0.082μF
C105	08E09008S12	PF., 0.18μF
E105	23E07090S01	ELY., 0.68μF/50V
C106	21E06323S01	CER., 100pF
E107	23E07084S01	ELY., 10μF/16V
C203	08E09008S11	PF., 0.27μF
E203	23E07086S01	ELY., 4.7μF/25V
C204	08E09008S03	PF., 0.082μF
C205	08E09008S12	PF., 0.18μF
E205	23E07090S01	ELY., 0.68μF/50V
C206	21E06323S01	CER., 100pF
E207	23E07084S01	ELY., 10μF/16V
C303	08E09008S11	PF., 0.27μF
E303	23E07086S01	ELY., 4.7μF/25V
C304	08E09008S03	PF., 0.082μF
C305	08E09008S12	PF., 0.18μF
E305	23E07090S01	ELY., 0.68μF/50V
C306	21E06323S01	CER., 100pF
E307	23E07084S01	ELY., 10μF/16V
C403	08E09008S11	PF., 0.27μF
E403	23E07086S01	ELY., 4.7μF/25V
C404	08E09008S03	PF., 0.082μF
C405	08E09008S12	PF., 0.18μF
E405	23E07090S01	ELY., 0.68μF/50V
C406	21E06323S01	CER., 100pF
E407	23E07084S01	ELY., 10μF/16V

Output P. C. Board

Capacitors		
C150	08E09008S06	PF., 0.1μF
C151	08E09008S16	PF., 0.022μF
C250	08E09008S06	PF., 0.1μF
C251	08E09008S16	PF., 0.022μF
C350	08E09008S06	PF., 0.1μF
C351	08E09008S16	PF., 0.022μF
C450	08E09008S06	PF., 0.1μF
C451	08E09008S16	PF., 0.022μF

Symbol No.	Part No.	Description
Resistors		
R150	06E06383S01	SPR, 10 ohm 1W
R250	06E06383S01	SPR, 10 ohm 1W
R350	06E06383S01	SPR, 10 ohm 1W
R450	06E06383S01	SPR, 10 ohm 1W

Power P. C. Board

Diode / Capacitor		
D570	48E02081S01	Diode, 11E2
C570	08E09008S15	PF., 0.47μF

RCA P. C. Board

Capacitors		
C115	21E03875S01	CER., 100pF
C215	21E03875S01	CER., 100pF

Transistor P. C. Board

Transistors		
Q102	48S44578J01	2SC945L
Q202	48S44578J01	2SC945L
Q302	48S44578J01	2SC945L
Q402	48S44578J01	2SC945L

Miscellaneous

ET501	29E09185S01	Power Terminals
ET502	29E06476S01	Speaker Output Terminals
F501	65S58596F08	Fuse, Auto 30A (For Battery Line)
JK501	09E06320S01	Input RCA Jack
LD501	48E06366S01	LED, AABG4307K (ORG/GRN)
LD502	48E06366S01	LED, AABG4307K (ORG/GRN)

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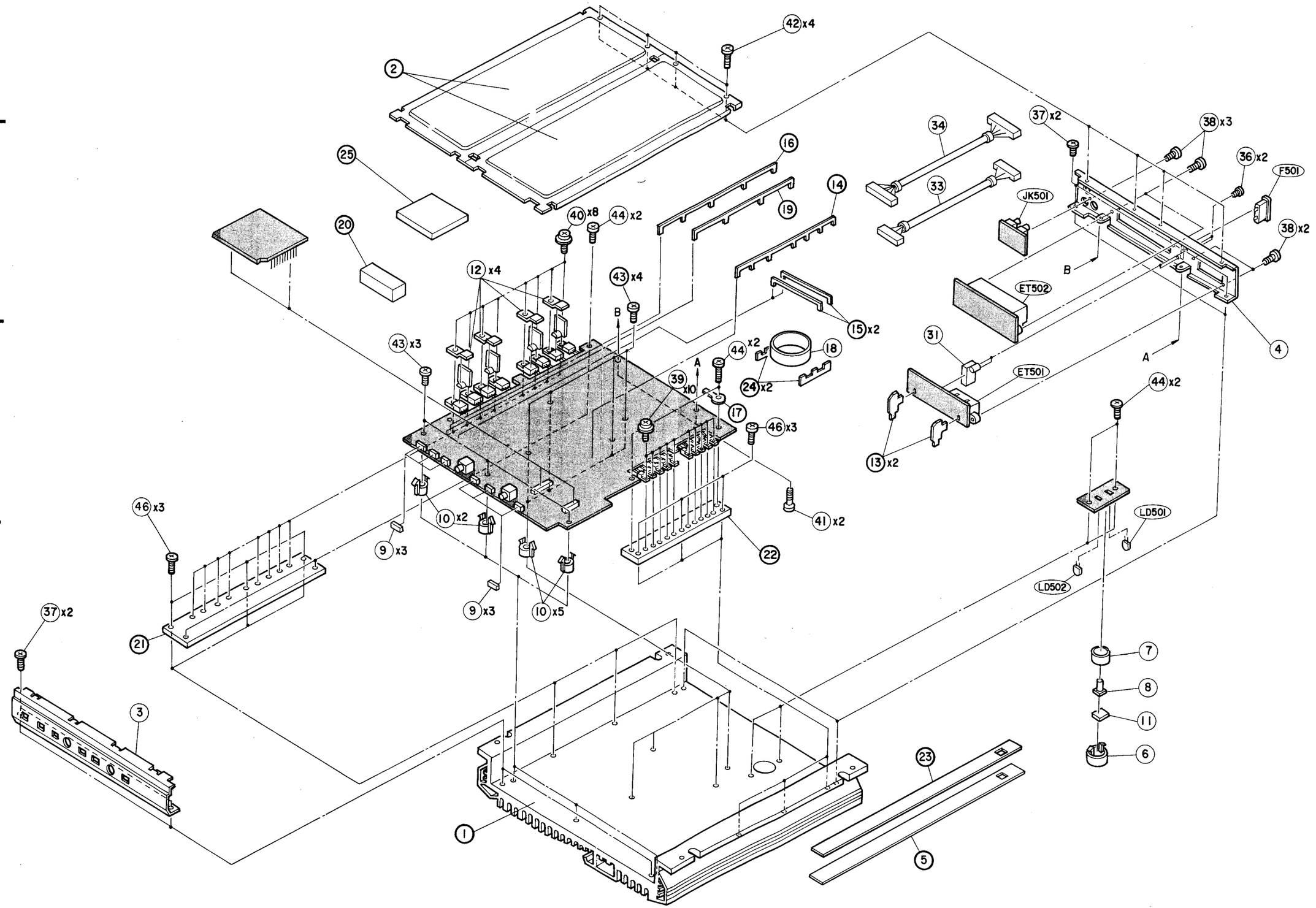
Exploded View (Cabinet)



Cabinet Assembly Parts List

Note : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description
3	4-A	27E09703S01	Chassis, Front
4	3-G	27E09704S01	Chassis, Rear
6	5-G	15E09383S01	Holder, LED
7	4-G	15E09384S01	Cover, LED
8	4-G	07E09492S01	LED Pre Base
9	4-C	36E09132S01	Knob, Switch (B)
10		43E08008S01	Support, P.C.Board
11	4-G	61E06376S01	Lens, LED
12		07E09494S01	Support, Transistor (B)
18	3-E	26A81610F02	Shield, CU
31	3-F	09E06453S01	Holder, Auto Fuse
33	2-F	01E09613S01	Assy., Connector (3P)
34	1-F	01E09631S01	Assy., Connector (5P)
36	2-G	03E08303S01	Screw, CPTS-4 (M2 × 6)
37		03E06480S01	Screw, CPTS-2 (M3 × 6)
38		03E04878S01	Screw, CPTS-2 (M3 × 8)
39	3-D	03E08304S01	Screw, CPTS-2 (M3 × 8.5)
40	2-D	03E08305S01	Screw, CPTS-2 (M3 × 9.5)
41	3-E	03E06492S01	Screw, CBTS-3 (M3 × 5)
42	1-E	03E06493S02	Screw, CFTS-3 (M3 × 6)
43		03E07234S01	Screw, CBTS-2 (M3 × 12)
44		03E08429S02	Screw, CBTS-2 (M3 × 6)
45	3-A	03E08429S01	Screw, CBTS-2 (M3 × 6)
46		03E06967S01	Screw, CBTS-2 (M3 × 10)

Symbol No.	Index	Part No.	Description

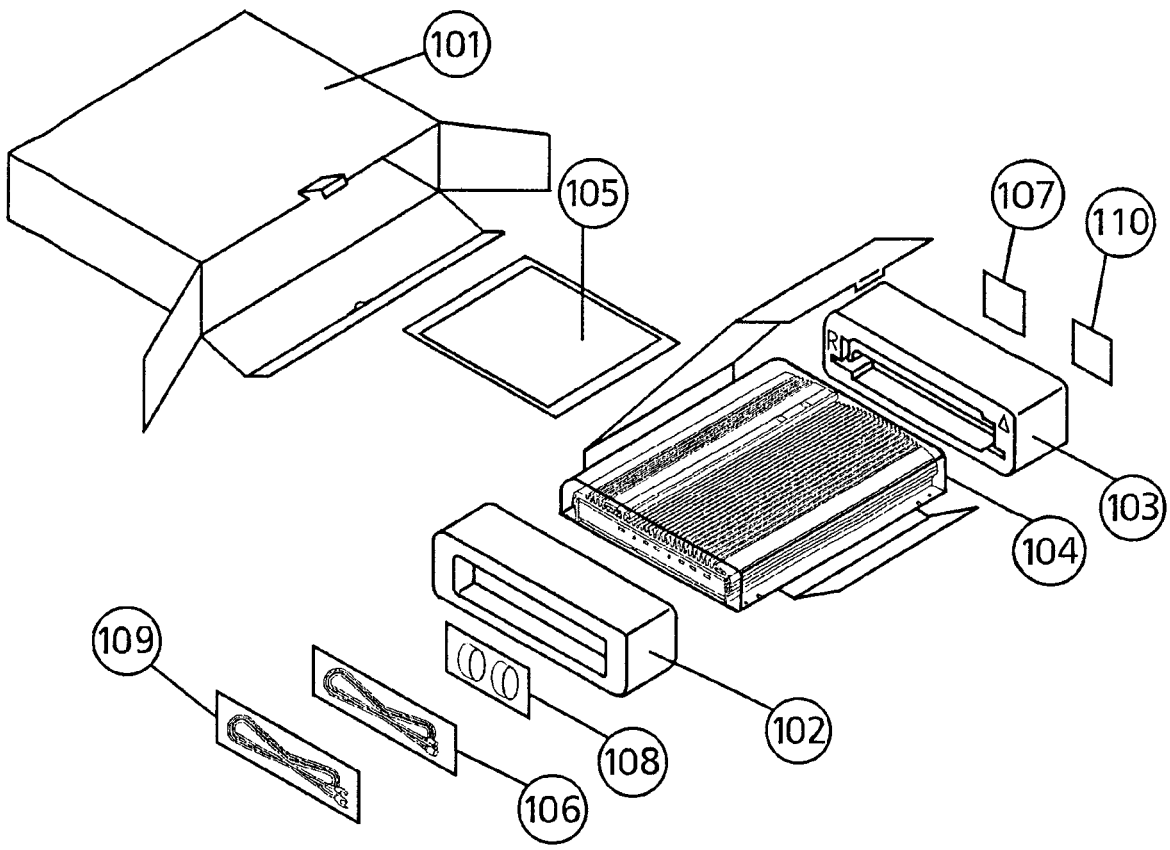
Packing Assembly Parts List

Symbol No.	Part No.	Description
○ 101	56E09607S01	Carton, Packing
● 101	56E09607S01	Carton, Packing
△ 101	56E09608S01	Carton, Packing
102	56E06374S01	Tray, Packing (L)
103	56E06375S01	Tray, Packing (R)
104	56B72811F08	Sack, Polyethylene
○ 105	68P21870W96	Owner's Manual
● 105	68P21870W96	Owner's Manual
△ 105	68P21870W99	Owner's Manual
106	01E08346S01	Assy., Remote Cord
107	65S58596F08	Fuse, Auto 30A (For Battery Line)
108	15A81064F03	Housing Rubber

Symbol No.	Part No.	Description
○ 109	01E06306S01	Assy., Power Cord
● 109	01E06306S01	Assy., Power Cord
△ 109-1	01E09603S01	Assy., Power Cord
△ 109-2	01E09604S01	Assy., GND Cord
110	03E09191S01	Screw, CHTS-1 (M4×20)

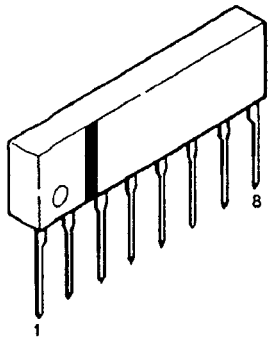
Notes: ○: North American Model Only, ●: Canadian Model Only,
△: General Foreign Model Only, Others: Common

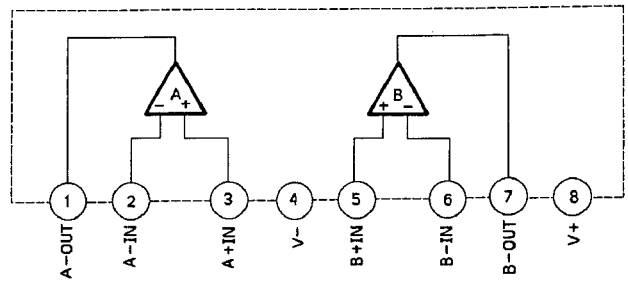
Packing Method View



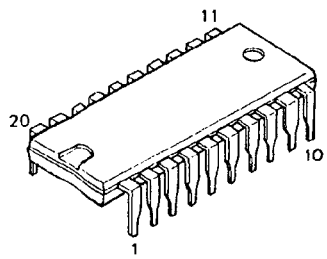
Semi - Conductor Lead Identifications

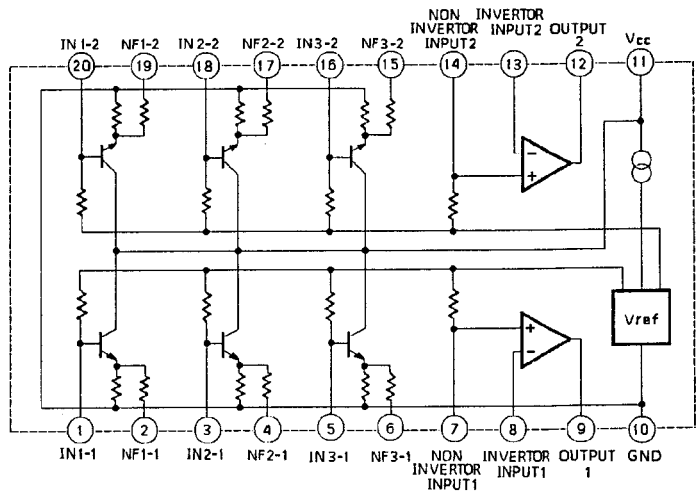
NJM4580L : IC101, 102, 104, 105, 204, 301, 304, 305, 404



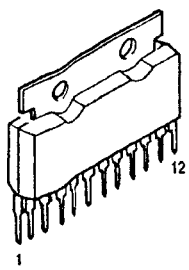


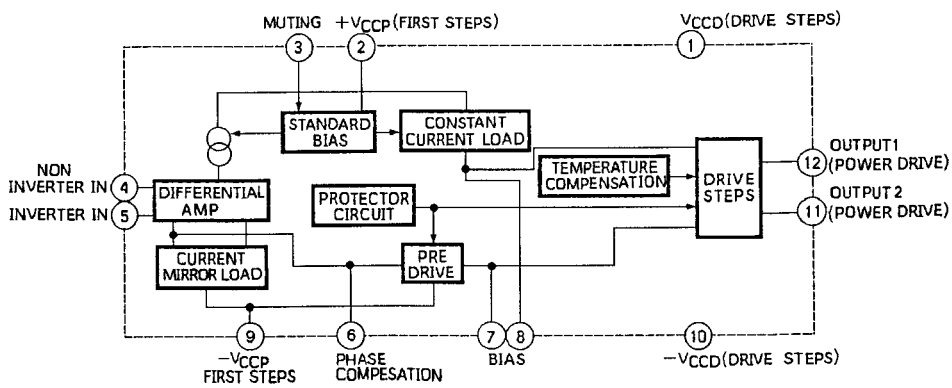
M5243P : IC103, 303



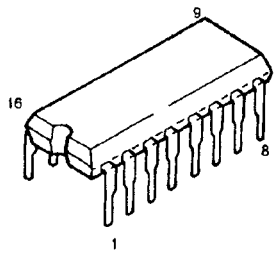


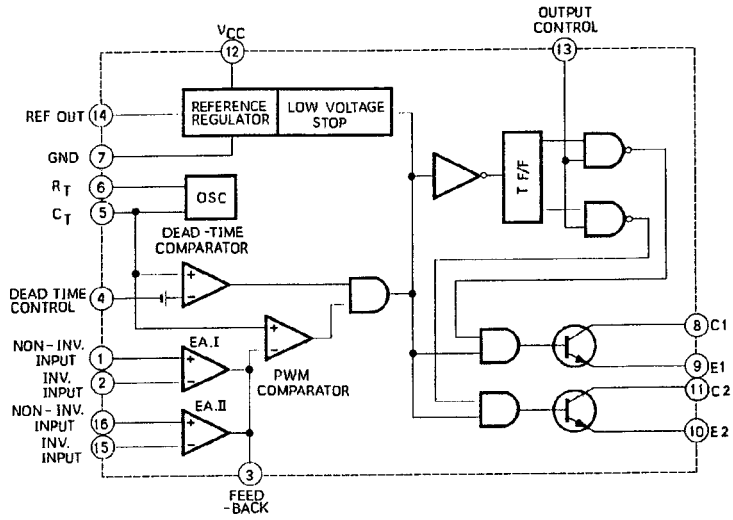
μPC1270H : IC106, 206, 306, 406



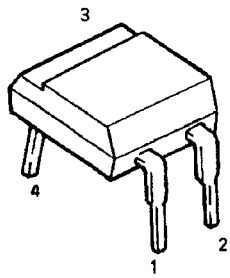


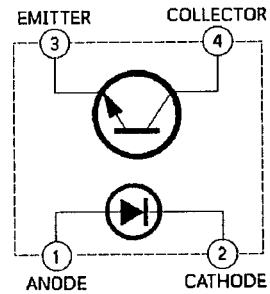
μPC494C : IC501





PS2501 - 1 : IC502





ALPINE ELECTRONICS INC.
Tokyo Office: 1-1-8 Nishi Gotanda,
Shinagawa-ku, Tokyo, Japan 141
Phone 03-3494-1101 Telex 8927-61

ALPINE ELECTRONICS OF AMERICA, INC.
19145 Gramercy Place
Torrance, California 90501
Phone 213-326-8000

ALPINE ELECTRONICS OF CANADA, INC.
605 Alden RD. Markham,
Ontario L3R 3L5 Canada
Phone 416-475-7280 Telex 06-986789

ALPINE ELECTRONICS GmbH
Brandenburger Strasse 2-6
D-4030, Ratingen F.R.Germany
Tel. 001-49-2102-4550 Fax. 001-49-2102-445321
Telex 8589157

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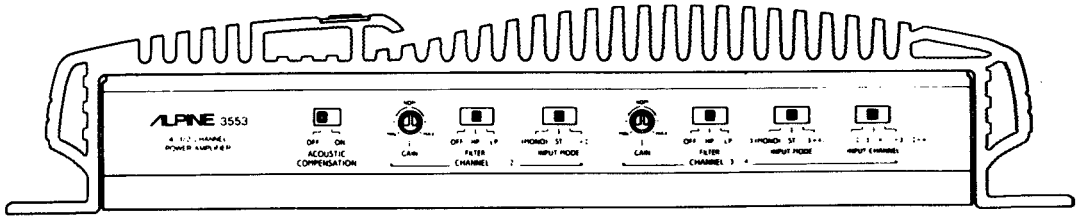
ALPINE®
SERVICE MANUAL

4/3/2 Channel Power Amplifier

— REVISED —

- **Serial Numbers after**
  - **No. 20739301 for North American model only**
  - **No. 20738601 for Canadian model only**
  - **No. 20738101 for General Foreign model only**
- **For information that is not mentioned in this service manual, refer to the Service Manual 3553 (68P41176W01).**

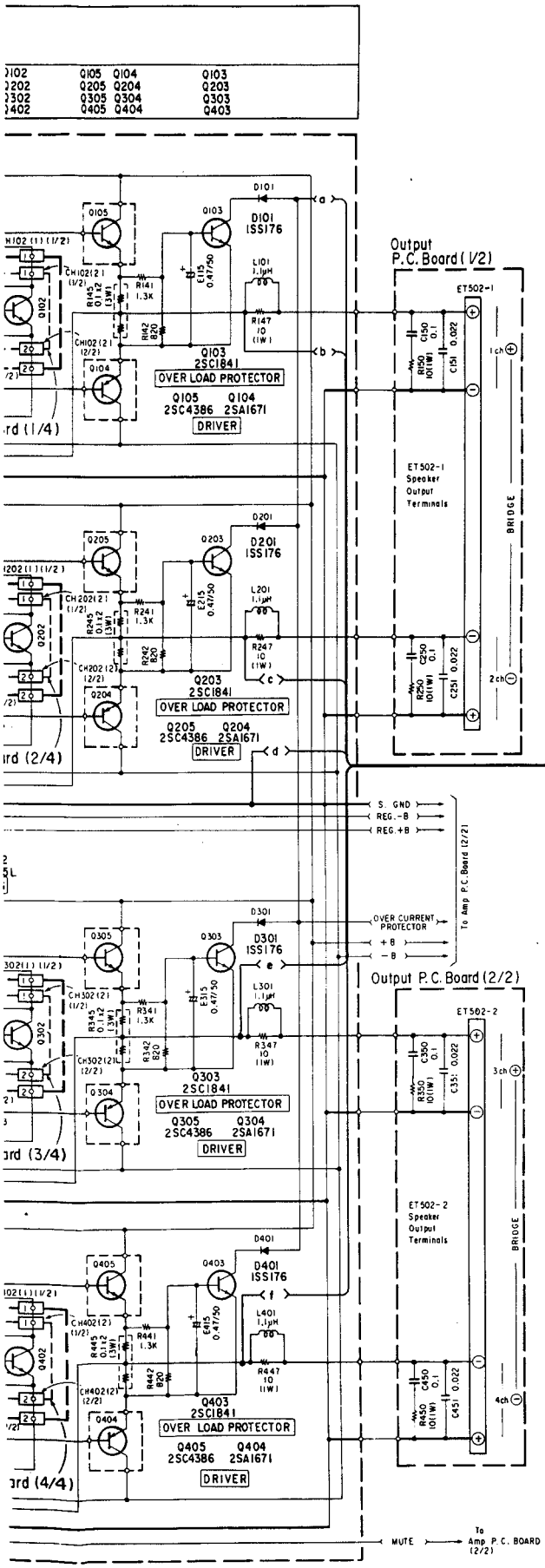


3553

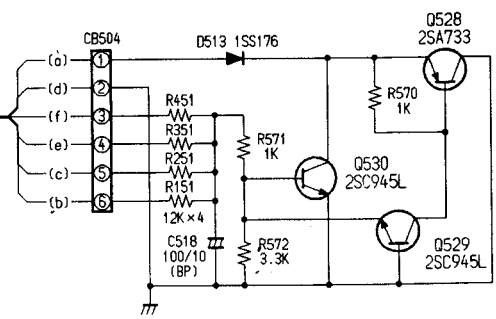
Schematic Diagram

Note : Refer to the Service Manual 3553 (68P41176W01) for the description not mentioned in this manual.

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000



Additional Circuit Diagram



Q528~530

DC BIAS DET

	B	C	E
Q528	13.5V	0V	13.5V
Q529	0V	13.5V	0V
Q530	0V	13.5V	0V

Electrical Parts List

Note : The parts is not mentioned, refer to the Service Manual 3553 (68P41176W01).

Symbol No.	Part No.	Description
AMP P. C. Board		
Transistors		
Q528	48T40081T02	2SA733
Q529	48S44578J02	2SC945L
Q530	48S44578J02	2SC945L

Symbol No.	Part No.	Description
Diode		
D513	48T58583F01	1SS176
Capacitor		
C518	23E06330S01	ELY., (B.P) 100μF/10V

Packing Assembly Parts List

Note : The parts is not mentioned, refer to the Service Manual 3553 (68P41176W01).

Symbol No.	Part No.	Description
109	01E10204S01	Assy., Power Cord
109-1	30E10206S01	Battery Cord
109-2	30E10207S01	GND Cord

Symbol No.	Part No.	Description

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Shinagawa-ku, Tokyo, Japan 141
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19145 Gramercy Place
Torrance, California 90501
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ALPINE ELECTRONICS OF CANADA, INC.
605 Alden RD. Markham,
Ontario L3R 3L5 Canada
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ALPINE ELECTRONICS GmbH
Brandenburger Strasse 2-6
D-4030, Ratingen F.R.Germany
Tel. 001-49-2102-4550 Fax. 001-49-2102-445321
Telex 8589157

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